



# **U.S. MTP WORKSHOP**

*A New Opportunity*

**Claudio Boër, Chairman**

**IMS International Steering Committee**

**Dimitris Kiritsis, Program Chair**

**IMS International MTP Workshop**

# *WHY SHARE IP?*

It makes good business sense to share IP.

- In most companies, about 20% of a company's IP is the “golden nugget”, therefore 80% could be shared
- Shared IP can be researched and developed at a fraction of the cost
- More research can be done without increasing your budget



# *WHY COLLABORATE?*

You can expand your research capacity and knowledge resources.

- IMS projects expand your research department to include researchers from other world-class companies, universities, and research institutions
- Research networks are expanded beyond your usual partnerships
- International collaborations yield global solutions



# WHY IMS?

## 1. IMS has established networks.

- IMS has 12 years of networking experience
- Networks centers are in each member country and coordinated through an international office
- Over 1,100 researchers in more than 700 companies and research institutions have conducted IMS-endorsed R&D
- Networks are supported through workshops, newsletters, and the web portal



# *WHY IMS?*



- 2. IMS has international IP agreements.
  - Through international agreement by the participating governments
  - No litigation in 12-year history
  - Established Consortium Cooperation Agreement (CCA) template

# WHY IMS?

3. IMS promotes/supports pre-competitive research in areas that should be shared.

- Sustainability

- Global companies need global solutions for government mandates
- Raw materials becoming scarce

- Energy Efficiency

- Key Technologies

- Standards

- Education



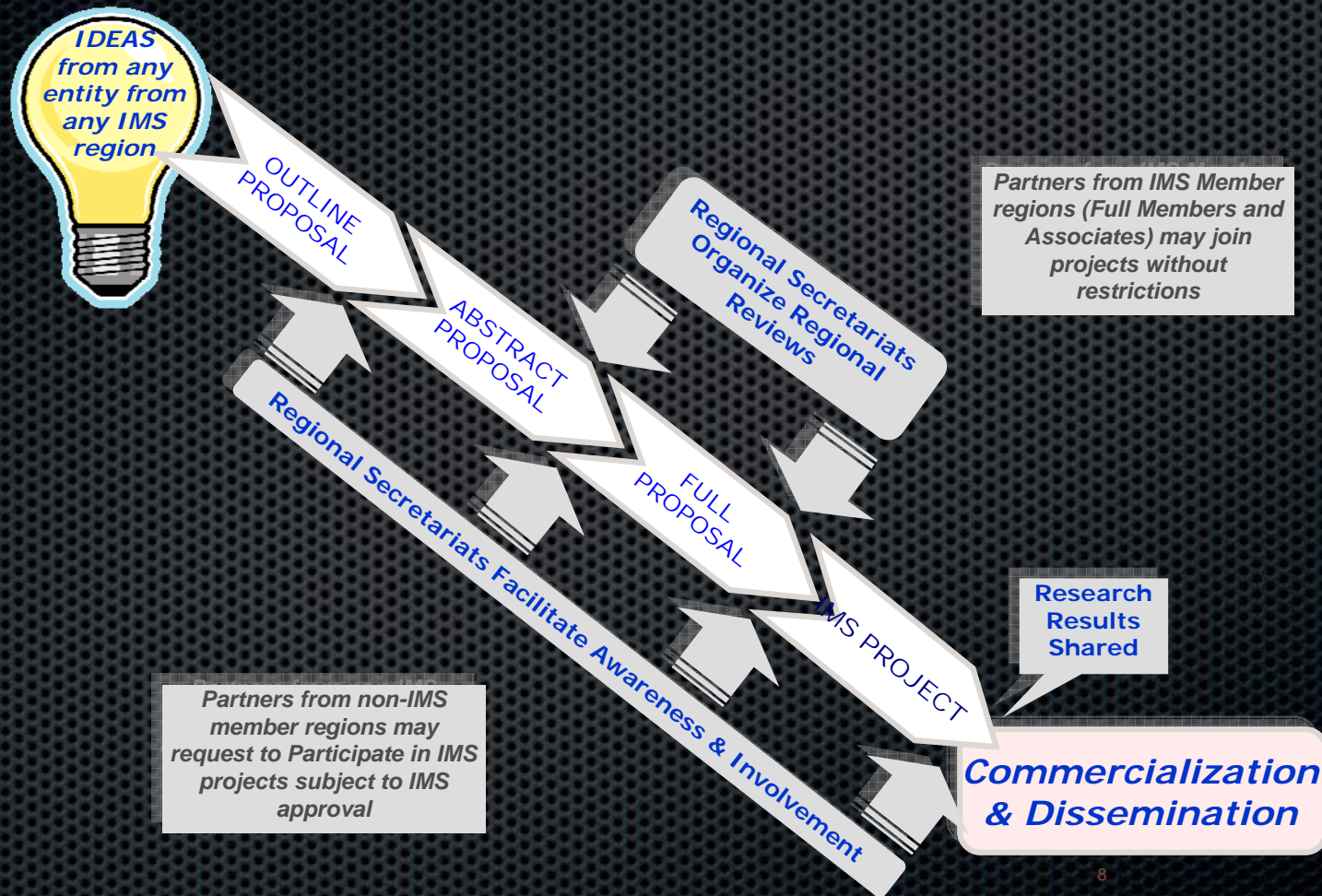
# WHY IMS?

## 4. IMS is government-supported.

- Services are “gratis”
  - Networks
  - Templates for project proposals to legal agreements for cooperation
  - Publications
  - Workshops, forums, and others
- No obligations to join, or “pressure” to participate



# the traditional **IMS** project process



# mtp program - *a non-traditional approach*

- Vision Forum Recommendations/ISC25 Decision for new way of forming projects
- Streamlined approach to project formation
- The established manufacturing technology platforms are:
  - Sustainability
  - Energy Efficiency
  - Key Technologies
  - Standards
  - Education



# mtp program

## What are MTPs?

- Knowledge sharing platforms for researcher groups that are already engaged in a specific R&D domain
- Facilitate exchange of information and to generate new ideas and new research goals
- Draw upon the knowledge generated in already running programs in IMS regions, however, they aim to promote global collaboration and to develop a holistic view in a specific domain.

# mtp program

## What is new about MTPs vis-à-vis (traditional) R&D projects under IMS?

- MTP initiatives are structured to be of complementary scope
- MTP initiatives are primarily a means to share knowledge that is generated in IMS regions
- Their key objective is to support "joint (global) thinking" in a specific domain and bring all relevant experts together to develop a global perspective in a specific domain, and to spark new ideas for R&D.
- Facilitates researcher networking on a broad scale.



# mtp program

*What are MTPs main deliverables?*

Likely outcomes are:

- joint publications
- the stimulation of new collaborative RD
- global-level recommendations on standards, skills, and policy

# mtp program

## How are MTPs to be financed?

- A minimum funding and or resource level of \$1m (U.S.) is recommended to participate in an MTP initiative
- Funding may be in the form of travel costs, costs for information dissemination, management costs, resources, facility and equipment use, or other in-kind contributions.

## A simple MOA is required (vs. a CCA and project proposal)

# What has been done in other regions?

**“Strategies for Global Manufacturing - A European View of IMS”**

**Sessions held:**

- **Sustainable Manufacturing  
Manufacturing Interoperability & Standards**
- **Industrial Integration of ICT**
- **Global Education in Manufacturing Strategy**
- **Key technologies**



# What the workshop considered for “sustainable manufacturing”

- Resource & Energy efficient manufacturing
- Clean Technologies
- Safety and risk management
- Closing the product information loops
- Involve the "consumer/user" in the lifecycle value chain
- Education at all levels & changing mindsets

# What the workshop considered for “interoperability”

European Virtual Laboratory for Enterprise Interoperability

InterOP - VLab

## Proposal 2 : Semantic Interoperability in IMS

- Enriched semantic profiles to facilitate IM
  - Profiles: Product, Processes, Organization (Human Capital, Structural Capital, Relational Capital)
- Provide mechanisms to contribute for the seamless understanding in manufacturing
- Capture and model intangible aspects in manufacturing

## Proposal 3: Services for Business

- New challenges in IM in the domain of SSME (Service Sciences, Service Management and Service Engineering)
  - Including complex socio-technological aspects
- Identification of manufacturing services and utility
- Elaboration of standards in manufacturing services

## Proposal 5 : Model-driven Interoperability and Service Oriented Architecture

- Develop ontology to implement MDI/SOA in manufacturing
- Develop transformation model for MDI/SOA adapted to manufacturing
  - ✓ In life cycle management
  - ✓ In PLM and manufacturing systems

## Proposal 7 : Standardization in IM

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- Framework and capability profiles in standardization
- Reconciliation of standards using semantic approach

# What the workshop considered for “industrial integration of ICT”

## IMS Recommendations (1)

### A Topics for Global research projects

1. **Global open / interoperable intelligent manufacturing systems** (16 votes)
2. **Multi-disciplinary collaboration considering human factors cognitive science** (10 votes)
3. **Bridging the gap between the virtual and real manufacturing including human aspects** (10 votes)
4. **Developing on-line decision support systems** (analytics and visualisation) (10 votes)
5. **Global complexity studies** (Global studies, best practice analysis) **within a distributed environment** (9 votes)

### B Standardisation research

1. **Services and architectures** (16 votes)
2. **ICT platforms, backbones, middleware for digital manufacturing** (15 votes)
3. **Data, information, knowledge and systems** (10 votes)
4. **Reference models, metrics** (9 votes)
5. **Modelling languages** (5 votes)

# What the workshop considered for “global education in manufacturing”

- Role of Teacher
- GEM Platform
- Teaching Factory
- Blended learning approaches
- Gaming & Game Theory

# What the workshop considered for “key technologies”

- User-centered products represent the future opportunities on the global market
- Product quality and added value shall be achieved with reference to consumer needs and expectations, through user-centered paradigms and processes;
- Key enabling technologies are therefore:
  - Virtualization of consumer profiles; Knowledge-based co-design and engineering tools; Innovative materials; Innovative scheduling solutions; New networked supply chain cooperative schemes; Innovative manufacturing technologies.

# Another Invitation

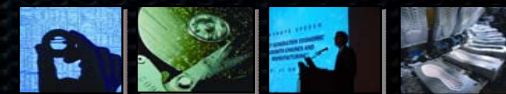
## IMS MTP Workshop

- ✦ Program Chair – Dimitris Kiritsis
  - When: 24 April, 2008
  - Where: Bellevue Hotel, Bern, Switzerland

***Attendance is limited to 90 participants, so register early.***



	GENERAL	MTP 1: CH/JAP	MTP 2: KOR	MTP 3: USA	MTP 4: USA/EU-NOR	MTP 5: EU-NOR
08:30 08:50	Opening Session - ISWG Chairman, ISC Chairman					
09:00 09:10	Breakout Sessions	<u>SUSTAINABILITY</u> Introductions and session plan by Leader/Promoter: <b>Kiritsis &amp; Kimura</b>	<u>ENERGY EFFICIENCY</u> Introductions and session plan by Leader/Promoter: <b>Cho</b>	<u>KEY TECHNOLOGIES</u> Introductions and session plan by Leader/Promoter: <b>Harris</b>	<u>STANDARDS</u> Introductions and session plan by Leader/Promoter: <b>Popplewell &amp; Ray</b>	<u>EDUCATION</u> Introductions and session plan by Leader/Promoter: <b>Carpanzano</b>
09:10 10:30	Breakout Sessions	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion
10:30 10:50	Break - Refreshments					
10:50 12:30	Breakout Sessions	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion	Presentation of MTP initiatives & Discussion
12:30 13:30	Lunch					
13:30 15:00	Breakout Sessions	Develop plan of action & Presentation for Closing Session	Develop plan of action & Presentation for Closing Session	Develop plan of action & Presentation for Closing Session	Develop plan of action & Presentation for Closing Session	Develop plan of action & Presentation for Closing Session
15:00 16:45	Combined Session: Presentations by MTPs (15 minutes each)					
16:45 17:00	Closing Session: Wrap-up by ISWG Chairman, closing comments by ISC Chairman					



# Expected outcomes

- 1) To present and discuss proposed MTP initiatives
- 2) Identify the type of collaboration and expected results of each one of them: joint paper, initiation or promotion of standards, common education activities, clustering of existing projects (or under preparation), new project ideas, community creation etc.
- 3) Identify the maturity level of each one of them (ready for MOA, remaining steps to be done, missing partners, etc.) and propose actions for each one of them

# Thank you !

*Further information:*

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